AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 | 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0001	04-Dec-2002	W32CS521613690	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
USA ENGINEER DISTRICT, JACKSONVILLE PRUDENTIAL OFFICE BLDG 701 SAN MARCO BLVD CESAJ-CT JACKSONVILLE FL 32207	DACW17	SOUTH FLORIDA AREA OFFICE CONOPS-S FLA AREA OFFICE 4400 PGA BOULEVA PALM BEACH GARDENS FL 33410	DACW17

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. DACW17-02-R-0031
	X	9B. DATED (SEE ITEM 11) 18-Oct-2002
		10A. MOD. OF CONTRACT/ORDER NO.
CODE / FACILITY CODE		10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SUSTAINABILITY OF RENOURISHMENT, MIAMI BEACH, BEACH EROSION CONTROL AND HURRICANE PROTECTION PROJECT, DADE COUNTY, FLORIDA

14.A. Standard Form 1442, Block 13.A., closing due date is hereby TEMPORARILY POSTPONED.

14.B. Any enclosures accompanying this amendment should be inserted in the plans and specifications as applicable. All superseded materials should be removed or adequately marked to indicate they have been superseded. (See Page 2 for continuation of Block 14.)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 04-Dec-2002

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SPECIFICATIONS: Specifications for this project have been amended as follows:

a. Asterisks appear before and after the line or lines where revisions have been made to the text on the enclosed revised pages and pertain only to the changes made by this amendment except where the reverse side of a page has been previously amended; however, these can be identified by the amendment number opposite the page number at the bottom of each page.
b. Some specification revisions include additions with underlined text or deletions with line/cross-outs. Changes to Submittal Register (Section 01330, Appendix A) are not marked.
c. The text changes may have necessitated reformatting of subsequent text or pages. If this is the case, those pages have also been issued as amended pages but are not marked with asterisks, underlining or line/cross-outs.

1. Section 00010: **Delete** Page 00010-3, and **Insert** new Page 00010-3.
2. Section 01330: **Delete** entire Appendix A (Submittal Register), and **Insert** new Appendix A (Submittal Register).
3. Section 02391: **Delete** entire section, and **Insert** new Section 02391.

Florida Department of Environmental Protection Permit No. 0080982-001-JC, indicated in Paragraph 1.4a of Section 01355, will be posted with a separate amendment.

DRAWINGS: No changes in this amendment.

Description of Work: This project entails the placement of sand along Miami Beach in the vicinity of 63d Street to 83d Street using an upland source of sand provided by the Contractor. This project is to be a domestic upland sand source test. The Florida Department of Environmental Protection (FDEP) permit does not authorize dredging of an open water borrow site. Approximately 600,000 cubic yards of material in place will be required to fill the beach area between monuments DNR-38 to DNR-46. This segment of beach is approximately 8,700 feet long. It will have a 205-foot berm width from the Erosion Control Line (ECL) at El. 9 MLW with a foreshore slope of 1 vertical on 15 horizontal. A 50-foot-wide pipeline corridor, centered at 553,290 North, is provided for placement of fill from the offshore. Any plan to use ~~a large number of~~ trucks hauling material along the local roads of the beaches will not be acceptable.

The Contractor based upon Government criteria will establish the sand source for this project. The sand must be suitable for Southeast Florida beaches. It must be free of debris, sharp rocks and pebbles, concrete rubble, and clay. The average mean grain size shall be equal to or greater than 0.30 mm and less than 0.55 mm. The fines must be less than 5 percent (passing the No. 230 Sieve). Ninety-nine percent of the material must pass the 3/8-inch sieve with no particles larger than 3/4-inch diameter. The sand shall have a color similar to the existing beach.

Protection of the environment, especially the existing offshore reef system, is very important. The Contractor's operations will have to be carried out in accordance with permit requirements. It is anticipated that this project may be constructed during the turtle-nesting season and precautions will have to be taken. The Contractor will be expected to provide the necessary permit documents and certificates of compliance for use of the sand source.

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Sustainability of Renourishment at Miami Beach, Dade County SPP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01310	SD-01 Preconstruction Submittals															
			List of Subcontractors															
			Signature Authority															
			Drug-Free Work Place Record															
		01321	SD-01 Preconstruction Submittals															
			Construction Schedule	1.2	G COR													
		01330	SD-01 Preconstruction Submittals															
			Submittal Register		G COR													
		01355	SD-01 Preconstruction Submittals															
			Environmental Protection Plan		G PD													
			SD-07 Certificates															
			Qualifications															
			SD-11 Closeout Submittals															
			Logs/Final Summary Report															
			Project Environmental Summary															
			Sheet															
		01411	SD-03 Product Data															
			Calibration Standard															
			SD-06 Test Reports															
			Turbidity Monitoring															
		01452	SD-01 Preconstruction Submittals															
			Quality Control Plan		G COR													
			Personnel Qualifications		G COR													
			Letter of Authority															
		01500	SD-01 Preconstruction Submittals															
			Mobilization/Demobilization Plan															

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		01500	Security Plan															
			SD-02 Shop Drawings															
			Site Layout															
		01525	SD-01 Preconstruction Submittals															
			Accident Prevention Plan (APP)		G	COR												
			Activity Hazard Analyses (AHA)		G	COR												
			Employee Safety and Health															
			Indoctrination (ESHI) and Training															
			Plan															
			Hazard Communication Plan															
			Emergency Response Plan															
			Hurricane and Severe Storm Plan		G	COR												
			Dive Operations Plan		G	COR												
			Critical Lift Plan		G	COR												
			Confined Space Plan		G	COR												
			Spill Response Plan		G	COR												
			SD-07 Certificates															
			Qualifications		G	COR												
			Dredge Plant Inspection		G	COR												
			Checklists															
			Crane Equipment Records															
		01780	SD-02 Shop Drawings															
			As-Built Drawings	1.2.1	G	COR												
		02391	SD-01 Preconstruction Submittals															
			Environmental Sampling Plan for		G	PD												
			Alternate Sand Source															

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		02391	Construction and Grade Stakes		G COR												
			Recovery Plan														
			Vibration Control Plan		G ED												
			Qualifications for Structural		G ED												
			Inspection/Evaluation and Vibration														
			Monitoring Personnel														
			Nearshore Hardbottom Protection		G PD												
			Plan (Offshore Pumpout Operation)														
			Notice of Installation of Lighted														
			Aids to Navigation and Intent to														
			Dredge														
			SD-02 Shop Drawings														
			Electronic Tracking System														
			Charts (Offshore Pumpout														
			Operation)														
			SD-04 Samples														
			Borrow Source Samples		G ED												
			SD-07 Certificates														
			Quality Control Sampling Program	2.8	G ED												
			Equipment and Performance Data														
			(Offshore Pumpout Operation)														
			Grade Stake Recovery		G COR												
			Monitoring Report														
			Monitoring Location Set-Up														
			Daily Instrument Logs														

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		02391	Post-Construction Structural															
			Survey															
			Pre-Condition Survey Report of		G	PD												
			Hardbottom/Reef Communities and															
			Operational Box (Offshore															
			Pumpout Operation)															
			Monitoring Hardbottom/Reef															
			Communities and Operational Box															
			(Offshore Pumpout Operation)															
			Post-Condition Survey Report of		G	PD												
			Hardbottom/Reef Communities and															
			Operational Box (Offshore															
			Pumpout Operation)															
			Dive Inspection Log of Pumpout															
			and Pipeline Location															
			Notification of Discovery of															
			Historical Period Shipwreck Sites															
			Daily/Monthly Report of															
			Operations															
			Notice of Misplaced Material															
			Construction and Grade Staking															
			Log															
			Buoy and Anchoring Inventory		G	COR												
			Record															

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		02391	Qualifications of Contractor's		G	PD												
			Personnel for Field Verification of															
			Marine Habitat within the															
			Operational Box (Offshore															
			Pumpout Operation)															
			Declaration of Inspection															
			(Stateside)															

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02391

BEACH FILL

SECTION 02391

BEACH FILL

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists in furnishing all plant, labor, equipment, supplies and material, and in performing all operations in connection with excavating, transporting, and placing beach fill on the beaches as indicated on the drawings and specified herein.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 422	(1963; R 1998) Test Method for Particle-Size Analysis of Soils
ASTM D 4373	(1996) Standard Test Method for Calcium Carbonate Content of Soils
ASTM E 329	(2000; Rev. B) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
ASTM E 1527	(2000) Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)

DEP-SOP-001/01	Florida Department of Environmental Protection Standard Operating Procedures, on web site www.dep.state.fl.us/labs/qa/sops.htm

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

~~Hazardous Toxic and Radiation Waste (HTRW) Evaluation and~~ Environmental Sampling Plan for Alternate Sand Source; G|PD

Within 14 days after the Notice of Award, the Contractor shall submit an Environmental Sampling Plan ~~which will include a Phase 1 HTRW report~~ for any proposed beach fill source. Approval of the Plan will not relieve the Contractor of his responsibility to document pre-existing conditions and to avoid contaminating any portion of the beach placement area with substandard material. The Government will direct the Contractor to conduct environmental sampling at any point for the duration of the project, based on site conditions. A portion of the sampling will be required at the sand source and project beach prior to the Notice to Proceed. All sampling and laboratory results shall be provided within 14 days of notification to obtain samples. The Environmental Sampling Plan shall be in accordance subparagraph "General Requirements for Borrow Sources" of paragraph ENVIRONMENTAL QUALIFICATIONS below and shall include, but not be limited to, the following:

~~a. Phase 1 HTRW Report.~~

~~b~~ a. Project drawings of the borrow site with proposed sampling locations shown on the drawings.

~~c~~ b. Information on the certified laboratory or laboratories (names, addresses, and phone numbers) that will be utilized to conduct the testing.

~~d~~ c. Methodologies and procedures for sampling and laboratory analysis.

Construction and Grade Stakes Recovery Plan; G|COR

After the Notice to Proceed, the Contractor shall submit a Construction and Grade Stakes Recovery Plan. The Plan will outline the steps that the Contractor will implement to recover all the stakes used on the project. This Plan will include the use of an inventory log that will be made available for review by the appropriate Government personnel. A sample Plan is appended to the end of this Section.

Vibration Control Plan; G|ED

Within 7 calendar days after Notice of Award and prior to mobilization of equipment, the Contractor shall submit a Vibration Control Plan. Approval of the Plan will not relieve the Contractor of his responsibility to document pre-existing conditions and to avoid damaging existing structures whether or not the structure(s) was determined to be susceptible to vibration damage; this includes but is not limited to damages as a result of equipment impact and/or vibration induced damages. The Vibration Control Plan shall include, but not be limited to, the following:

a. Name of Vibration Control Specialist and alternate.

b. List of structures that are susceptible to vibration damage.

c. Number of monitors (seismographs) required for the project, monitor locations, and the number of monitors that will

operate simultaneously during the project.

d. Calibration data for each seismograph that will be used on the project. Calibrations shall be current, not older than one year, and follow the manufacturer's recommended procedures.

e. List of methods and procedures to reduce ground vibrations induced by construction activities to below the pre-determined maximum allowable vibration level for the designated vibration sensitive structure; i.e., reducing equipment speed, changing fill placement method, reducing equipment size, and using manual labor.

f. Plan for each work area showing the proposed construction equipment in the area, the description of susceptible structure(s) in the work area, monitors in the work area, and the list of methods and procedures in subparagraph e. above.

g. The minimum safe working distance that vibration producing equipment may operate from each vibration sensitive structure.

h. The maximum allowable ground vibration level that is permissible without causing threshold damage to each vibration sensitive structure(s).

i. The Pre-Construction Survey for vibration control monitoring.

Qualifications for Structural Inspection/Evaluation and Vibration Monitoring Personnel; G|ED

Within two weeks of the Notice of Award, the Contractor shall furnish to the Contracting Officer, for approval, qualifications of all personnel required to perform all structural inspection and vibration monitoring to be performed during the life of this contract.

Nearshore Hardbottom Protection Plan (Offshore Pumpout Operation); G|PD

Within 7 calendar days after Notice of Award and prior to mobilization of equipment, the Contractor shall submit a Nearshore Hardbottom Protection Plan. Approval of the Plan will not relieve the Contractor of his/her responsibility to document the existing nearshore conditions and avoid damage to the marine environment. The Nearshore Hardbottom Protection Plan shall include, but not be limited to, the following:

a. Name and qualifications of environmental marine personnel.

b. List of equipment in operation within the operational box during beach fill placement.

c. List of methods and procedures to monitor hardbottom areas adjacent to the operational box prior to, during, and post construction.

Notice of Installation of Lighted Aids to Navigation and Intent to Dredge

Prior to commencement of work on this contract, the Contractor will be required to notify the Commander, Seventh Coast Guard District of his intended operations to install lighted aids to navigation and intent to dredge and request that it be published in the Local Notice to Mariners. This notification must be given in sufficient time so that it appears in the Notice to Mariners at least 30 days prior to the commencement of this operation. A copy of the notification shall be provided to the Contracting Officer.

SD-02 Shop Drawings

Electronic Tracking System Charts (Offshore Pumpout Operation)

The Contractor shall furnish required plotted charts to the Contracting Officer.

SD-04 Samples

Borrow Source Samples; G|ED

Within 10 days after Notice of Award, the Contractor shall furnish a 5-pound sample of the proposed beach fill material to Mr. Doug Rosen, CESAJ-EN-GG, of Jacksonville District USACE, telephone (904) 232-1617. Sample(s) shall be provided in sealed plastic containers, either jars or bags, and clearly marked with the name of the Contractor, the name of the source, and any other identifying information. The submitted sample shall be representative of the typical nature of the entirety of the proposed sand fill. The Government will retain the submitted samples.

SD-07 Certificates

Quality Control Sampling Program; G|ED

The Contractor shall furnish copies of the reports required by paragraph QUALITY CONTROL SAMPLING PROGRAM below to Mr. Doug Rosen, CESAJ-EN-GG, of Jacksonville District USACE (submittal), and Robin Trindell at the following address: Florida Fish and Wildlife Conservation Commission, Bureau of Protected Species Management, 620 S. Meridian Street OES-BPS, Tallahassee, Florida 32399-1600, or e-mail robin.trindell@fwc.state.fl.us.

Equipment and Performance Data (Offshore Pumpout Operation)

The Contractor shall furnish proof of electronic positioning equipment calibration to the Contracting Officer.

Grade Stake Recovery; G|COR

After completion of the project, the Contractor shall provide a letter to the Contracting Officer certifying that all grade stakes have been recovered in accordance with the Contractor's approved Construction and Grade Stake Recovery Plan.

Monitoring Report

The Contractor's Vibration Control Specialist shall submit a written vibration monitoring report (every two weeks) to the

Contracting Officer which details the daily activities of the vibration monitoring program. This report shall include, but not be limited to, location of monitoring equipment; instrument serial number; date and times of readings; magnitude of vibration levels; a sketch for each monitoring station showing the relationship of the monitor to vibration sensitive structures; daily instrument logs - as defined below; instructions transmitted to the Contractor's personnel regarding the modification or stoppage of work operations to keep vibrations below the allowable levels; and, any other information pertinent to the vibration monitoring program.

Monitoring Location Set-Up

Submit (every two weeks) photograph (3" x 5") and sketch of each monitoring location after equipment is installed. Show general location of the monitoring site on the sketch.

Daily Instrument Logs

Submit (every two weeks) daily instrument logs to document satisfactory performance of the equipment during monitoring periods. Document strip charts daily with monitoring station number, date, operator signature, and instrument serial number.

Post-Construction Structural Survey

Submit two copies of the post-construction survey report within two weeks after completion of the inspection.

Pre-Condition Survey Report of Hardbottom/Reef Communities and Operational Box (Offshore Pumpout Operation); G|PD

Within 20 calendar days after receipt of Notice to Proceed and prior to mobilization of equipment, the Contractor shall submit a report on the conditions of the hardbottom/reef communities in the vicinity of his/her proposed pumpout location field verifying the Government data. This report shall include, but not be limited to, the Contractor's proposed operational box, audio/visual documentation, drawings showing the limits and conditions of the area inspected, and notes regarding pre-construction conditions.

Monitoring Hardbottom/Reef Communities and Operational Box (Offshore Pumpout Operation)

The Contractor shall furnish weekly reports on the conditions of the hardbottom/reef communities at the pumpout operation area.

Post-Condition Survey Report of Hardbottom/Reef Communities and Operational Box (Offshore Pumpout Operation); G|PD

The Contractor shall submit a report on the conditions of the hardbottom/reef communities at the pumpout location within 20 calendar days after removal of equipment from the operational box.

Dive Inspection Log of Pumpout and Pipeline Location

A dive inspection log shall be maintained on the project site. After every dive inspection, an entry shall be made into the log.

This log shall be made available at all times.

Notification of Discovery of Historical Period Shipwreck Sites

The Contractor shall immediately notify the Contracting Officer if any shipwreck, artifact, or other objects of antiquity that have scientific or historical value, or are of interest to the public, are discovered, located, and/or recovered.

Daily/Monthly Report of Operations

The Contractor shall prepare and submit three (3) copies of the Daily Report of Operations, using either ENG Form No. 27A or ENG Form No. 4267, for each dredge and/or unloader working. This report shall be submitted on a daily basis and not in groups (groups = multi-days reports packaged together at one time). A copy of these forms are appended to the end of this Section. In addition to the daily report, the Contractor shall prepare a Monthly Report of Operations for each month or partial month's work on either ENG Form No. 27A or ENG Form No. 4267. The monthly report shall be submitted on or before the 7th of each month, consolidating the previous month's work. Upon completion of the job, the Contractor shall submit a consolidated job report, combining the monthly reports. The Contractor shall distribute one copy of each report to the following:

a. District Engineer, ATTN: CESAJ-EN-C; U.S. Army Engineer District, Jacksonville, P.O. Box 4970, Jacksonville, Florida 32232-0019. Reports shall be submitted on a monthly basis with daily reports accompanying the monthly report and job report.

b. Quality Assurance Representative (QAR) assigned to the dredge/project.

Additionally, one copy of these forms shall be maintained by the Contractor on the dredge(s) for the Contracting Officer's inspection purpose. Further instructions on the preparation of the reports will be furnished at the Preconstruction Conference.

Notice of Misplaced Material

The Contractor shall notify the U.S. Coast Guard Marine Safety Office of any misplaced material as stated in Clause OBSTRUCTION OF NAVIGABLE WATERWAYS of Section 00700 CONTRACT CLAUSES.

Construction and Grade Staking Log

The Contractor shall prepare and maintain a log to inventory all the stakes used in the construction of the project. The log shall include information concerning the location, installation, and recovery of all stakes. The Contractor shall make this log available for review by the appropriate Government personnel upon request. Upon completion of the project, the Contractor shall furnish the log to the Contracting Officer.

Buoy and Anchoring Inventory Record; G|COR

The Contractor shall develop a method of inventory for all anchors, buoys, buoy cables used in the construction of the

project. This record shall be used by the Contractor to recover all buoys and anchoring equipment at the completion of the project.

Qualifications of Contractor's Personnel for Field Verification of Marine Habitat within the Operational Box (Offshore Pumpout Operation); G|PD

Contractor shall furnish to the Contracting Officer, for approval, his/her personnel performing the pre- and post-condition surveys and hardground monitoring; personnel shall have a degree in Marine Biology or related field with experience in marine organism identification and benthic monitoring of marine hardbottom habitats in Southeast Florida.

Declaration of Inspection (Stateside)

Refer to paragraph FUEL OIL TRANSFER OPERATIONS below for submittal.

1.4 ORDER OF WORK

The Contractor shall begin placing fill on the beach at any point as long as the operation is continuous without intervening gaps.

1.5 PUMPING OF BILGES

Contractors are warned that pumping oil or bilge water containing oil into navigable waters, or into areas which would permit the oil to flow into such waters, is prohibited by Section 13 of the River and Harbor Act of 1899, approved 3 March 1899 (30 Stat. 1152; 33 U.S.C. 407). Violation of this prohibition is subject to penalties provided under the referenced Act.

1.6 HISTORICAL PERIOD SHIPWRECK SITES

If any shipwreck, artifact, or other objects of antiquity that have scientific or historical value, or are of interest to the public, are discovered, located, and/or recovered, the Contractor acknowledges that:

a. The site(s), articles, or other materials are the property of the State of Florida, with title vested in the Department of State, Division of Historical Resource; and that,

b. He shall immediately notify the Contracting Officer.

Refer to subparagraph "Preservation and Recovery of Historic, Archeological, and Cultural Resources" of Section 01355 ENVIRONMENTAL PROTECTION.

1.7 FINAL CLEANUP

Final cleanup, as stated in the paragraph COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK of Section 00700 CONTRACT CLAUSES, shall include the removal of all of the Contractor's plant and equipment either for disposal or reuse. Plant and/or equipment to be disposed of shall ONLY be disposed of in a manner and at locations approved by the Contracting Officer. The Contractor shall be responsible for the removal of all debris associated with the Contractor's operations and work area activities. This includes the pipeline corridor, pumpout site, and borrow area. Unless otherwise approved in writing by the Contracting Officer, the Contractor will not be

permitted to abandon pipelines, pipeline supports, pontoons, or other equipment in the disposal area, pipeline access areas, water areas, or other areas adjacent to the work site. Pilings and any other debris removed or created as a result of the execution of this contract shall be disposed of in a manner and at locations approved by the Contracting Officer.

1.8 WORK AND ACCESS AREA

1.8.1 Staging and Access Areas

Staging and access areas are shown on the contract drawings that have been identified for the Contractor's use. The staging area shall not be used for stockpiling of beach fill material. The final limits of the staging and access areas indicated on the drawings shall be field-determined by the Contracting Officer in coordination with the Local Sponsor and the Contractor. It shall be the responsibility of the Contractor to investigate and obtain any additional areas which may be necessary for his/her construction operations. The additional areas will be subject to the approval of the Contracting Officer.

1.8.2 Contractor Responsibilities

The Contractor shall exclude the public from the work area in the immediate vicinity of his operations. The Contractor shall install warning signs to warn the public and all commercial recreational boats of all construction activities. The Contractor shall be responsible for providing and maintaining all water and land access routes necessary for his equipment and plant to and from the work sites. The Contractor shall ascertain the environmental conditions which can affect water and land access, such as climate, terrain, winds, current, waves, swells, depths, shoaling, and scouring tendencies.

1.9 ADJACENT PROPERTY AND STRUCTURES

Any damage to private or public property within the project boundaries, including staging site(s) and work and access areas/roads, shall be repaired promptly by the Contractor. Any damage as a result of the Contractor's operations shall be repaired at no cost to the Contracting Officer.

1.10 PERMITS AND RESPONSIBILITIES

The Contractor's attention is directed to the Clause PERMITS AND RESPONSIBILITIES of Section 00700 CONTRACT CLAUSES and paragraph PERMITS AND AUTHORIZATIONS of Section 01355 ENVIRONMENTAL PROTECTION.

1.11 FUEL OIL TRANSFER OPERATIONS

In accordance with U.S. Coast Guard regulations (33 CFR 156.120), couplings used in fuel oil transfer operations on any vessel with a capacity of 250 or more barrels of oil shall be either a bolted or full-threaded connection; or a quick-connect coupling approved by the Commandant; or an automatic back-pressure shutoff nozzle used to fuel the vessel. An executed fuel oil transfer (Declaration) form signed by the tanker operator shall be submitted to the Contracting Officer for each refueling operation. The U.S. Coast Guard shall also be notified prior to any refueling. A copy of the Declaration of Inspection for Refueling is appended to the end of this Section.

1.12 SIGNAL LIGHTS

The Contractor shall display signal lights and conduct operations in accordance with the General Regulations of the Department of the Army and of the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable channels, as set forth in Commandant U.S. Coast Guard Instruction M16672.2, Navigation Rules: International-Inland (COMDTINST M16672.2), or 33 CFR 81 Appendix A (International) and 33 CFR 84 through 33 CFR 89 (Inland) as applicable.

1.13 WORK VIOLATIONS

Work done in violation of these specifications or a verbal or written stop order of the Contracting Officer will be considered as unsatisfactory progress for purposes of progress payments in accordance with Clause PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS of Section 00700 CONTRACT CLAUSES.

PART 2 PRODUCTS (NOT APPLICABLE)

2.1 SAND SOURCE

This project is a test fill effort to use a domestic upland source of sand. No offshore sand sources shall be considered as an acceptable source. ~~Any sand placed on the beach not conforming to these specifications shall not be paid for under this contract, in accordance with subparagraph "Deduction for Nonconforming Work" below.~~ Any sand placed not conforming to these specifications shall be removed from the project site by the Contractor at no additional expense to the Government. The submitted sand sample will be used for verification laboratory testing of proposal submittals and for visual comparisons by Government inspectors during construction.

2.2 SAND FILL MATERIAL

The Contractor is responsible for providing a source, delivery and spreading of beach compatible sand that meets the following specifications. The sand supplied shall be naturally created. The sand may be processed, but manufactured sand is not allowed. Sand produced from crushed rock is considered manufactureed sand and is not allowed. Contractor's offering blended sand shall submit a Blending Plan, showing the method the sand components will be thoroughly mixed before final placement on the beach. The existing beach sand shall not be mixed with sand delivered under this contract. The project requires the Contractor to propose sand with an average mean grain size of 0.30 millimeters (mm) to 0.55 mm. The sand will be placed and shaped on the beach to fill the construction template shown in the plans, except as modified by the Mean Grain Size. Final beach fill shape shall parallel the construction template shown in the plans.

The project will benefit from placement of coarser sand and volume reduction is provided to propose the coarsest sand available. See Appendix G, Table 1.

(1) No volume reduction is offered for the project design beach, which must be built. This is approximately 52 percent of the total fill quantity.

(2) A reduced volume is offered for an increased Average Mean Grain Size for the advance nourishment portion of the fill which is 48 percent of the total fill quantity.

If the Contractor can provide sand with an Average Mean Grain Size of 0.33 mm or coarser, the corresponding proposed and placed quantity will be reduced. Placed volume reduction for coarser sand is available on Appendix G, Table 1, up to a maximum allowable Mean Grain Size of 0.55 mm. The Contractor should select the largest (coarsest) Mean Grain Size he/she can provide. The Contractor is warned that failure to achieve the grain size class selected on Appendix G, Table 1, by delivering a finer Mean Grain Size sand, will increase the quantity of sand required for delivery to the project. Correspondingly, a coarser sand delivered than selected on Appendix G, Table 1 will reduce the volume of sand required.

2.3 CHARACTER OF MATERIAL

The character of the sand to be supplied by the Contractor shall meet the following physical specifications:

a. Composed of quartz and/or calcium carbonate with no more than 5 percent sand of other mineralogical composition.

b. The calcium carbonate sand grains allowable under this specification are naturally occurring, durable and solid calcium carbonate grains. Many calcium carbonate grains have excessive internal pore space dramatically reducing the grains density and durability. Calcium carbonate grains delivered under this specification shall be 90 percent durable and solid calcium carbonate grains. Internal pore space shall not exceed 10 percent.

(1) Whole and broken mollusk shells from the beach environment are durable and solid calcium carbonate grains. Due to the platy nature of shells and shell fragments, no more than 60 percent of the sand (quartz or calcium carbonate) shall be whole or broken shell. Unacceptable calcium carbonate grains include sand derived from benthic foraminifera, sponge spicules and halimeda.

c. Silt content (passing No. 230 sieve (0.063 mm)) of less than 5 percent.

d. The coarse grains must meet the following gradation limits:

(1) 95 percent of the material must pass the #4 sieve (4.76 mm).

(2) 99 percent of the material must pass the 3/8 inch sieve (9.51 mm).

(3) 100 percent of the material must pass the 3/4 inch sieve (19.0 mm).

The gravel sized material must be distributed throughout the beach fill, and not be concentrated in isolated areas.

e. Average Mean Grain Size greater than or equal to 0.30 mm (1.74 phi) and less than 0.55 mm (0.86 phi).

f. Phi Standard Deviation values from 0.50 phi to 1.75 phi.

g. Free of debris, sharp rocks and pebbles, concrete rubble, clay, and organic material.

h. Sand color shall be similar to the existing beach. Based on the Munsell Soil Color Chart, color must be within the range:

HUE of: 2.5 YR, 5 YR, 7.5 YR, 10 YR, 2.5 Y, 5 Y
CHROMA of: 1, 2, or 3
VALUE of: 6, 7, or 8.

This color specification eliminates strongly colored or dark sand.

2.4 CALCULATION OF AVERAGE MEAN GRAIN SIZE

The Mean Grain Size and Phi Standard Deviation shall be determined by Method of Moments Statistics calculated from sieve analysis of the proposed sand source. A Certified Testing Laboratory shall perform laboratory testing in accordance with ASTM D 422. The Method of Moments Statistics shall be calculated according to the instructions contained within this Section.

Mean Grain Size and Phi Standard Deviation are statistical measures of the textural character of a sample of sand, corresponding to the mean and standard deviation of a statistically normal population (i.e., sand grain sizes). Laboratory sieving of sand provides the data for calculation of the Mean Grain Size and Phi Standard Deviation. There are several methods of calculating these statistics. For the purposes of this contract, Mean Grain Size and Phi Standard Deviation shall be calculated by the Method of Moments. The method of calculation is included in this Section. The Average Mean Grain Size refers to the average of the Mean Grain Sizes calculated for individual samples sieved in the laboratory. The Average Mean Grain Size shall be used to evaluate volume reduction for this contract.

2.5 GRAIN SIZE REPORTING

The grain size distribution information shall be based upon the sieve analysis specified in subparagraph "Laboratory Testing" below. Each sample test result shall be graphically represented by a gradation (cumulative frequency distribution) curve and a frequency distribution curve. All gradation curves shall be submitted on SAJ Form 2087 a sample of which is appended to the end of this Section (Appendix C). All SAJ Form 2087 title information shall be filled out with project name, date, sample number, location sample obtained, Unified Soil Classification, percent silt passing the No. 200 sieve (0.074 mm), percent silt passing the No. 230 sieve (0.063 mm) and Method of Moments Mean Grain Size and Phi Standard Deviation. Each gradation curve shall state what Mean Grain Size class the sample meets, according to the Appendix G, Table 1. Frequency curves shall show percent retained on vertical axis and grain size, in millimeters on horizontal axis. The vertical axis shall use a fixed scale of 0 to 40 percent. For samples that contain information exceeding that scale, a vertical scale of 0 to 75 percent shall be used. An automatic scaling feature shall NOT be

used for this curve. Frequency curves shall be identified by sample number and date, matching the corresponding gradation curve. A tabulation, on paper, of the laboratory results of weight retained, percent weight retained, and cumulative percent retained on each sieve shall be provided with each gradation curve. Tabulated grain size laboratory results shall also be reported in digital format in an Excel spreadsheet. Digital data shall be supplied not greater than on a weekly basis. Samples from the sand source shall be numbered consecutively. Samples from the project site shall be identified with the Acceptance Section, numbered consecutively for each Acceptance Section, and a station and range location.

2.5.1 Laboratory Testing

All quality control samples shall be sieved according to ASTM D 422, using U.S. Standard sieves 3/4, 3/8, 4, 8, 16, 30, 40, 50, 70, 100, 140, 200, 230. The results of the sieve analysis shall be reported as specified in paragraph GRAIN SIZE REPORTING above. In addition, all quality control samples from the sand source shall include the following laboratory tests, with the results reported on each sample's gradation curve, and tabulated with each sample's sieve analysis tabulation:

a. Calcium Carbonate Content in accordance with ASTM D 4373.

b. Munsell Soil Color Chart evaluation of Hue, Chroma, and Value.

c. Visual Estimate of Shell Content. This shall be accomplished by comparing the visual estimate of shell content on each sieve of the sieve analysis with standard laboratory visual percentage charts. The visual estimate of shell content for the entire sample shall be the weighted average of the individual visual estimates from each sieve.

2.6 CERTIFIED TESTING LABORATORY

Certified Testing Laboratory refers to a geotechnical testing laboratory qualified under ASTM E 329 standards and certified by AASHTO (American Association of State Highway and Transportation Officials) National Voluntary Accreditation Program; or MMRL (AASHTO Materials Reference Laboratory accreditation); and, personnel qualified by NICET (National Institute for Certification of Engineering Technicians).

2.7 MEAN GRAIN SIZE AND PHI STANDARD DEVIATION CALCULATION USING THE MOMENT METHOD

The equations and discussion for calculating the Mean Grain Size and Phi Standard Deviation using the moment method are appended to the end of this Section (Appendix F).

2.8 QUALITY CONTROL SAMPLING PROGRAM

The Contractor shall perform sampling that includes no less sample collection than described in the following plan. The Contractor shall conduct all testing in a location accessible to Government inspectors. The Contractor shall include the sampling and testing procedure in his Contractor's Quality Control Plan. The Quality Control Plan shall include the name, address and point of contact for the Certified Testing Laboratory to be used for all grain size analysis. The location of the testing facility to be used for this contract shall also be included in the Quality Control Plan. Gradation test results shall be turned in daily with the daily quality control reports. Individual samples collected shall be

approximately one half pound in weight and obtained from a single location. All laboratory test results shall be reported to the Government.

2.8.1 Sampling at the Sand Source

Sand samples for laboratory testing shall be collected at the sand source at the rate of one sample for every 2,000 cubic yards of sand to be transported. Sampling and testing shall be completed before the sand is transported to the project site, and shall be representative of the sand being delivered to the project. Each day's samples Mean Grain Size and Phi Standard Deviation shall be averaged and the running average recorded on the gradation curve, along with the individual sample Mean Grain Size and Phi Standard Deviation. A new average shall be started each day. The Average Daily Mean Grain Size shall be used as an indicator for the Mean Grain Size for the sand proposed on the Price Schedule and being delivered to the project. No individual sample Mean Grain Size shall be less than 0.25 mm. Any materials not meeting the Mean Grain Size requirements shall not be transported to the project site. Any materials not meeting the Contractor's proposed Mean Grain Size delivered to the project site shall fall into the lower Mean Grain Size class on Appendix G, Table 1, and appropriately more sand shall be delivered.

2.8.2 Sampling at the Project Site

Sand samples for laboratory testing shall be collected at the project site. Sand samples shall represent the fill material only, avoiding existing beach sand below the project fill. Sand samples shall be collected from each beach fill Acceptance Section. Sand samples shall be collected at the rate of one sample representing 500 cubic yards of sand delivered. This represents approximately 70 samples taken per 500-foot Acceptance Section. The samples shall be collected on a regular sampling grid covering the entire Acceptance Section, and the location recorded on the gradation curve. The plan of beach sampling shall be submitted with the Contractor's Quality Control Plan. All sample collection in an Acceptance Section shall be distributed temporally over the entire filling operation. Half of the samples shall be collected during filling of the Acceptance Section, when the fill is approximately less than half of the final grade. The second half of the samples shall be taken from the completed Acceptance Section. Samples shall not be collected from the surface, but 6 inches below the ground surface. Before an Acceptance Section is surveyed for final payment and accepted by the Contracting Officer, all sample laboratory analyses shall be completed and submitted to the Contracting Officer. All individual sample Mean Grain Size and Phi Standard Deviation shall be tabulated. The tabulation shall include sample identifying information including Acceptance Section, sample number and date. The Average Mean Grain Size and Average Phi Standard Deviation for each Acceptance Section shall be calculated from and indicated on the tabulation sheet. The Average Mean Grain Size from the sample analysis for each Acceptance Section shall be compared to Appendix G, Table 1, and verify that the appropriate quantity of sand has been delivered for the Mean Grain Size of the sand in that Acceptance Section. The survey of the Acceptance Section will verify the quantity of sand delivered. The total quantity of sand in an Acceptance Section shall match the quantity shown on the Price Schedule for the Mean Grain Size class of sand indicated by the Average Mean Grain Size of sand delivered to that Acceptance Section.

2.9 ENVIRONMENTAL QUALIFICATIONS

2.9.1 General Requirements for Borrow Sources

It is important that any material to be used for a Dade County sand borrow source be considered to be as clean as what exists on Dade beaches or is normally used for playground quality sand. A Phase I HTRW (Hazardous Toxic and Radioactive Waste) Evaluation to meet the requirements of ASTM E 1527 ~~shall be performed~~ on the borrow source material shall be submitted with the proposal as indicated in Section 00100A ADDITIONAL PROPOSAL PREPARATION/SUBMISSION INSTRUCTIONS. If the borrow site contains HTRW materials or is suspected of containing hazardous materials, fissionable materials, environmental contaminants or otherwise toxic materials it shall not be used as a borrow source. The Government will request the Contractor perform testing/sampling in accordance with what is provided below, and testing results be provided to the Government.

2.9.2 Requirements for Radioactive Isotopes

Radiation levels and radioactivity content shall be measured for the borrow material and for beach area. The borrow area and the beach placement area shall be surveyed in a pattern approved by the Contracting Officer as described below. The background radioactivity and radiation levels (milli-roentgens/hour) of the borrow area vs. the beach site shall be compared. The levels of contaminant (radioactivity content in pico-curies/gram) in borrow material cannot exceed the mean levels existing at the beach placement area. If radioactivity levels of the source material exceed the mean naturally occurring radiation levels at the beach area, the site shall not be used as a borrow source. These radiological surveys and analysis shall consist of the following:

(1) Radiation surveys are to be taken at the beach and borrow sites. These surveys shall be taken at waist level. Additionally, samples from the beach and borrow site shall be analyzed for radioactivity levels and be reported in pico-curies per gram. The measurements shall also fall within 1 standard deviation or suspect high values will be determined to be the most conservative representation of the results. The results of the radioactivity (pico-curies per gram) shall be reported in graphical and tabular form.

(2) The resulting beach background radiation level shall not be increased by more than 20 micro-roentgens/hour. This is to be determined by gamma radiation surveys (with the probe at waist level) taken both before and after the beach material placement.

(3) Gamma spectroscopy analysis for Radium 236 shall be performed at the beach site and at the potential borrow site. The placement of borrow material shall not allow the resulting composite radioactivity at the beach (determined by the gamma spectroscopy) to increase by more than 5 pico-curies/gram.

(4) Methodology for radioactivity content to be used for individual sample analysis shall be EPA Method 9310 for alpha and beta emissions.

(5) Methodology for gamma spectroscopy analysis shall be submitted by the Contractor and approved by the Contracting Officer.

(6) The Contractor shall provide reports to the Contracting Officer demonstrating their evaluation of the above criteria and provide all data including all radiation values taken.

2.9.3 Requirements for Environmental Contaminants

The Contractor shall provide laboratory reports to the Contracting Officer demonstrating their evaluation of the below criteria and provide all data including all chemical values determined. The data shall be provided in graphical and tabular format. It is anticipated that background level of contaminants for Dade County beaches is essentially zero or below detection limits. Should contaminants be detected in borrow material the levels of contaminant in borrow material cannot exceed the mean levels existing at the beach placement area in samples taken as described below. These measurements will consist of the following chemical testing of the borrow material and elutriates:

(1) Total Recoverable Petroleum Hydrocarbons (TRPH), EPA Method 9071B ~~9071A~~ or EPA 8440

(2) Total Metals (those listed as Priority Pollutants), EPA 3050B/EPA 6010B, except Hg, EPA 7471A ~~Heavy metals (As, Ba, Cd, Cr, Hg, Pb, Se), EPA Method 3051 (Use graphite furnace method for each metal except Hg which has own method)~~

(3) Volatile Halogenated Organics and Aromatic Hydrocarbons (BTEX), EPA 8021B ~~(C1-, Br-), EPA Method 8021A~~

(4) ~~Polycyclic~~ Polynuclear Aromatic Hydrocarbons, EPA 8100 ~~(BTEX), EPA Method 8021A~~

(5) Pesticides, EPA 8081, and PCB's, EPA 8082

(6) Herbicides (Chlorinated Herbicides 2,4-D and 2,4,5-TP), EPA 8151A

(~~5~~ 7) Elutriate Preparation shall be by the method provided in EPA/CE 81-1. Testing for all above contaminants shall be performed on elutriates.

(8) To ensure quality control (QC) and quality assurance (QA) of these procedures, work shall be conducted in accordance with DEP-SOP-001/01

If contaminant levels of the borrow material exceed the mean naturally occurring contaminant levels at the beach area, the site shall not be used as a borrow source. The measurements shall also fall within 2 standard deviation or suspect high values will be determined to be the most conservative representation of the results. Elutriate values shall be compared to State water quality standards to determine whether runoff will violate State standards.

2.9.4 Sampling Locations for Environmental Contaminants

Samples to be taken for the above requirements shall be taken every 1,000 feet as needed in the beach placement area, for representative beach quality samples, and in spots considered to be representative of every 50,000 cubic yards of the borrow material. Representative samples from all sites shall be taken in a pattern and locations approved by the Contracting Officer.

PART 3 EXECUTION

3.1 NOTIFICATION OF COAST GUARD

The Contractor shall obtain approval from the U.S. Coast Guard for all buoys, dredging/offshore pumpout operation aid markers to be placed in the water, and dredging/offshore pumpout operation aid markers affixed with a light prior to the installation. Dredging aid markers and lights shall not be colored or placed in a manner that they will obstruct or be confused with navigation aids.

3.2 EXCAVATION

3.2.1 General

All excavation and handling operations for beach fill shall be performed in a manner that complies with all applicable federal, state and local laws.

3.2.2 Turbidity

Filling operations shall be done in a manner that will minimize turbidity of the water at the discharge from the fill area. If monitoring shows turbidity exceeds the background at the compliance stations by more than 29 NTU's, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

3.2.3 Location Control (Offshore Pumpout Operation)

The Contractor is required to have electronic positioning equipment that will locate marine equipment when transporting fill and operating in the pumpout location. The Contractor is required to calibrate the equipment as required by the manufacturer or as required by the Contracting Officer. Proof of calibration shall be submitted to the Contracting Officer. Continuous locations of the equipment shall be made at all times during transport operations. The location of the equipment is to be by computed coordinates with a probable range error not to exceed 10 feet horizontal and furnished daily as part of the daily report of operations. Data collected while the equipment is in the vicinity of the pumpout location shall be plotted in chart form in 200-foot intervals with date and time. The charts shall show the track and draft of the marine equipment approaching, traversing, and leaving the work area in question. Plotted charts shall be organized and maintained at a central work location for inspection on a daily basis by the Contracting Officer. Plotted charts shall be organized as directed, bound, and submitted weekly to the Contracting Officer for permanent file record.

3.2.3.1 Divers

Certified divers shall assist in the placement of anchors or spuds for monobuoys or spud barges so that anchoring or spudding down does not occur within 150 feet of any hardbottom/reef community at the nearshore area.

3.2.4 Submerged and Floating Pipeline (Offshore Pumpout Operation)

3.2.4.1 Submerged Pipeline

In the event the Contractor elects to submerge his/her pipeline, the pipeline shall rest on the bottom, and the top of the submerged pipeline and any anchor securing the submerged pipeline shall be no higher than the project depth for any navigation channel in which the submerged pipeline is placed. Should the Contractor elect to use a pipeline material which is buoyant or semi-buoyant, such as PVC pipe or similar low density materials,

the Contractor shall securely anchor the pipeline to prevent the pipeline from lifting off the bottom under any conditions. The Contractor shall make daily underwater inspections of the submerged pipeline to ensure buoyancy has not loosened the anchors. The Contractor shall remove all anchors when the submerged pipeline is removed. The location of the entire length of submerged pipeline shall be marked with signs, buoys, lights, and flags conforming to U.S. Coast Guard regulations. Pipeline corridors over hardbottom areas have been identified in the plans. The Contractor shall not relocate these corridors.

3.2.4.2 Floating Pipeline

Should the Contractor's pipeline not rest on the bottom, it will be considered a floating pipeline and shall be visible on the surface and clearly marked. In no case will the Contractor's pipeline be allowed to fluctuate between the surface and the bottom, or lie partly submerged. Lights shall be installed on the floating pipeline as required in paragraph SIGNAL LIGHTS above. The lights shall be supported either by buoys or by temporary piling, provided by the Contractor and approved by the Contracting Officer. Where the pipeline does not cross a navigable channel, the flashing yellow all-around lights shall be spaced not over 200 feet apart, unless closer spacing is required by U.S. Coast Guard personnel, in which case the requirements of the U.S. Coast Guard shall govern, at no additional cost to the Government.

3.2.5 Deduction for Nonconforming Work

Beach fill that is obtained from unauthorized areas~~, or beach fill not meeting the requirments in these specifications,~~ will not be paid for under this contract. Excavation in such area(s) is a violation of State of Florida Permits for this work. If it is determined that excavation has been performed outside the permitted borrow area(s), the quantity of the material excavated from these areas will be computed and subtracted directly from the pay quantity of material placed on the beach.

3.3 TRANSPORT OF EXCAVATED MATERIALS

The method of transporting the fill from the borrow area to the fill area shall be approved by the Contracting Officer. Use of trucks to haul material along the roads of the beach communities will not be acceptable. No overflow or spillout will be permitted during transport of fill to the discharge site. Failure to repair leaks or change method of operations which result in spillage that exceeds turbidity and water quality standards during transport to the discharge site will require suspension of operations. The prevention of overflow or spillage shall be a prerequisite to the resumption of operations. The Contractor shall provide and maintain barricades, warning signals, and flagmen to insure public safety in the vicinity of the pipe pumpout operations. Any damages to private or public property resulting from the Contractor's operations shall be repaired by the Contractor at his expense.

3.3.1 Marine/Offshore Pumpout Operation

3.3.1.1 Protection of Hardbottom/Reef Communities

a. The boundary of the operational box(es) is designed to be at least 150 feet away from known hardgrounds based upon side scan survey from February 2000 to March 2000. The area inside the box(es) has been ground verified by DERM biologist for the presence of hardgrounds;

however, neither the Corps nor DERM guarantees that the area within the operational box(es) to be completely free of small patches of hardbottom or significant habitat. Prior to placement of equipment, it will be the responsibility of the Contractor to verify the existence of these resources in areas where equipment will be placed so they are not impacted by the placement of equipment.

b. When placing equipment within the operational box, the Contractor shall ensure that any hardground resource that may be present within the operational box is not impacted. Anchors, pilings, spuds, etc., shall be placed in sandy areas only at least 150 feet away from any hardground resources. The Contractor shall ensure that anchors are placed so that there is no potential for the anchor to be pulled over hardground resources. Anchors shall also be placed so that anchor cables do not extend over hardground resources or be in a position to damage these resources in case the cable becomes slack or breaks.

c. Prior to placement of any equipment in the nearshore area, the Contractor shall field verify the data provided by the Government. After this inspection, the Contractor shall file a pre-condition survey report to the Contracting Officer regarding the consistency of the operational box with the Government data. After the operational box location has been verified for use, the Contractor shall push his equipment into the project area versus towing when within 1.5 miles of the shoreline to avoid potential cable drags across hardbottom/reef communities. The Contractor shall visually inspect all submerged or floating hoses prior to installation to confirm the structural integrity of the hoses. Pumping sand from offshore shall only occur within the limits of the specified box shown on the drawings. The limits of the operational box shall be shown on a real time display. If at any time any portion of the flexible pipe or its connection to the dredge is outside the operational box, the dredge will immediately cease pumping sand and pump only water until the dredge connection is back within the parameters of the operational box. Once the dredge is back within the limits of the operational box, the dredge may resume pumping sand to the beach. This shall be verified by an electronic monitoring device that is installed on the dredge. This electronic monitoring device shall record the density of the material going through the pump and the position of the dredge connection during pumpout operations. This information shall be recorded and reported in accordance with subparagraph "Recording Charts for Hopper Dredges" of Section 01355 ENVIRONMENTAL PROTECTION.

3.3.1.2 Pre-Condition Survey

The Contractor shall perform a pre-condition survey of the pumpout operational area. The report filed by the Contractor shall include, but not be limited to, an audio/video record, notes, pictures, and drawings similar to the plan drawings of the existing conditions of the nearshore operational area. The Government furnished data along with the Contractor's findings shall be noted on the drawings. Any discrepancies with the Government furnished data on the location of hardbottom/reef communities in the vicinity of these areas shall be clearly identified if greater than 10 feet. Based upon this data as approved by the Contracting Officer, the Contractor shall layout his/her operational box. This area shall then become the operational box.

3.3.1.3 Monitoring Hardbottom/Reef Communities and Operational Box

The Contractor shall provide weekly reports on the condition of the hardbottom/reef communities in the vicinity of operational box. The Contractor may use the Diver's Inspection Report form appended to the end of this Section.

3.3.1.4 Post-Construction Survey

The Contractor shall perform a post-condition survey of the pumpout operational area(s). This report shall document, as the pre-condition survey does, the conditions of the work areas after the Contractor has completed the beach fill operations. Any areas of mechanical damage or sedimentation shall be noted in the report.

3.3.2 Protection of Hardbottom Areas Within the Identified Pipeline Corridors

3.3.2.1 General

The Contractor shall not use floating pipeline to traverse the hardbottom areas within the pipeline corridor. The Contractor shall ensure that the submerged pipeline is placed to minimize impact to the hardbottom and to avoid large coral heads to the greatest extent possible. The Contractor shall coordinate his operations with DERM who will be monitoring the pipeline corridors in compliance with the State of Florida Department of Environmental Protection (FDEP) permit conditions. The Contractor shall utilize the buoys placed by Dade County marking the location of pipeline boundaries and large/hard coral heads as visual guides in placing the pipeline.

3.3.2.2 Boundaries

The boundaries of the pipeline corridors shall be marked by DERM with buoys using a Differential Global Positioning System (DGPS) prior to pipeline positioning. The north and south boundaries of the corridor shall be marked with surface buoys. DERM will permanently mark the corridors by drilling stainless steel eyebolts into the hardbottom at 500-foot intervals along the corridor. The eyebolts shall be marked with subsurface buoys to allow repeated, accurate relocation of the corridor.

3.3.2.3 Coral Heads

In order to provide maximum avoidance of large coral heads during pipeline placement, all coral heads greater than or equal to 1 meter in diameter that exist within the corridor shall be marked by DERM with a surface buoy prior to positioning of the pipeline. This shall provide visual guidance for the Contractor placing the pipeline. The position of each marked coral head shall be recorded using DGPS. When possible, DERM shall relocate the coral heads out of the path of the pipeline prior to positioning.

3.3.2.4 Pipeline Joints

The Contractor shall provide a collar or a pipeline joint every 100 feet along the pipeline. The collar or pipeline joint shall extend a minimum of 8 inches outward from the pipe to provide for minimal pipe contact with the hardbottom/reef habitat.

3.3.2.5 Dislodged Coral Heads

Immediately after pipeline placement, fragments of coral heads or dislodged

coral heads shall be stabilized by DERM using appropriate scientifically accepted methods. Coral heads that are shaded by the pipeline shall be transplanted by DERM to suitable locations.

3.3.3 Dive Inspection of Pumpout and Pipeline Locations

a. A dive inspection will be performed by the Contractor at the commencement of the initial pumpout operations. The first loads will be pumped out during daylight hours. At the outset, divers will inspect all hose, pipeline, and connections from the dredge to any boosters and from the booster all the way to the shore, as the dredge pumps clear water. Upon completion of the inspection and confirmation of no apparent leaks, the discharge of sand into the pumpout system will commence. Divers will perform a reinspection of all hose, pipeline, and connections from the dredge to the booster and from the booster to all the way to the shore.

b. Every day that weather conditions permit, a dive team will dive on the flexible pipe (hose) used in the pumpout operation. In accordance with subparagraph d. of subparagraph "Construction" of paragraph BEACH FILL below, a visual inspection of the remaining pipeline will be performed daily for signs of slicks, plumes, boils, or other surface anomalies that would indicate leaks, seepage, or failures.

c. Any time that the weather precludes the dive team from diving, the Contractor will perform a visual inspection of the floating pipe and the pipeline to the booster during pumping operations. Should any turbulence or siltation be found in the water along the pipeline route during this inspection, the dredge will immediately cease pumping sand and pump water until the pipeline is cleared. At this point, the dredge will shut down until a dive team can inspect the pipeline.

3.3.4 Work Area

The Contractor shall inventory all anchors, buoys, and buoy cables deployed in the prosecution of the work in a manner acceptable to the Contracting Officer. The Contractor shall use this information to account for and recover these items at the completion of the project.

3.3.5 Miami Ocean Dredged Material disposal Site (MODMDS)

a. In case of emergency, whereby material in the hopper dredge or barge with pumpout capability cannot be transported to the beach, the Contractor shall notify the Contracting Officer and obtain authorization to transport the material to the MODMDS. The material shall be pumped at the center point of the site given by the following coordinates:

Latitude = 25 degrees 45 minutes 00 seconds
Longitude = 080 degrees 03 minutes 22 seconds

b. Disposal of the material must be in accordance with the disposal monitoring requirements described in the MODMDS Site Management and Monitoring Plan (SMMP). Disposal monitoring consists of the following for each trip to the MODMDS:

(1) Date
(2) Time
(3) Vessel Name

(4) Captain of vessel
(5) Number of scows
(6) Vessel position and draft at specified time (no more than every 2 minutes):
(a) When within the borrow area
(b) Between the borrow area and the MODMDS; and,
(c) When within the MODMDS
(7) Volume of material disposed
(8) Disposal technique

3.3.6 Upland Transport

The Contractor is responsible for obtaining all permits, licenses, easements, and rights-of-way required for transport or staging of equipment and materials.

3.4 BEACH FILL

3.4.1 General

All beach fill sand excavated from the borrow area shall be transported to and deposited on the beach within the lines, grades, and cross section shown on the drawings except as may be modified by the provisions of subparagraph b. of subparagraph "Construction" below. Except as specified in subparagraph "Dressing for Payment" below, the Contractor shall maintain and protect the fill in a satisfactory condition at all times until acceptance of the work. Any fill sand which is lost in transit or permitted to flow into the offshore waters or onto the upland from the point the sand is discharged on the beach will not be subject to payment. The fill shall be free of clay lenses, rock or silt pockets. Any such material remaining in the fill shall be removed and disposed of by the Contractor as approved by the Contracting Officer. Any existing signs, buoys or other structures within the work lines shall be protected and/or removed and later replaced by the Contractor as directed. The Contractor shall provide sand ramp walkways across the beach pipeline at intervals not greater than 200 feet.

3.4.2 Construction

a. Prior to placement of fill, the Contractor shall remove from the site of the work all snags, driftwood, and similar debris lying within the foundation limits of the beach fill section. All materials removed shall be disposed of in areas provided by and at the expense of the Contractor and approved by the Contracting Officer. Any groins within the fill area shall be adequately ramped over by the Contractor to prevent damage thereto by the Contractor's equipment. Grading and other construction equipment will not be permitted outside the easement lines shown on the drawings except for designated ingress and egress to and from the site. Mobile equipment of any type operating within 50 feet of any seawall, building, groins, or other structure as determined by the Contracting Officer shall be rubber wheeled. Tracked equipment shall not be permitted to operate within 50 feet of any seawall, building, groin, or other structure as determined by the Contracting Officer. Hand tools may be required in these areas.

b. The fill material shall be placed and brought to rest on the beach to the lines, grades, and cross section indicated on the drawings, unless otherwise provided for herein or directed by the Contracting Officer. The Contractor shall not stockpile pipe or any

other equipment or debris on private property which is west (landward) of the Erosion Control Line as shown on the drawings. Pipe shall be placed parallel to shore and landward as far as possible without compromising the dune system. Temporary storage of pipe on the beach shall be kept to a minimum between 15 April and 31 October. The beach is subject to changes and the elevations on the beach at the time the work is done may vary from the elevations shown on the drawings. The Contracting Officer reserves the right to vary the width and grade of the berm from the lines and grades shown on the plans in order to establish a uniform beach for the entire length of the project. The beach fill cross sections shown on the drawings are for the purpose of estimating the theoretical amount of fill needed and will be used by the Contracting Officer in making any change in the lines and grades. The Contractor will not be required to dress the fill below the mean high water to the slopes shown but will be required to do the dressing specified in subparagraph "Dressing for Payment" below.

c. Construction staking on the beach shall be made of steel pipe or other material that can and will be removed intact after filling as verified during final walk-through inspection. The Contractor shall inventory all the construction staking used on the project in a manner acceptable to the Contracting Officer.

d. The Contractor shall maintain a tight discharge pipeline for the pumpout operations at all times. The joints shall be so constructed as to preclude spillage and leakage. The pipeline corridor shall be visually inspected by the Contractor daily during period of active pumpout operations for signs of slicks, plumes, boils, or other surface anomalies that would indicate leaks, seepage, ruptures, or failures. All occurrences shall be indicated in the Contractor's QCR. The development of a leak shall be promptly repaired or the pumpout operations shall be shut down until complete repair has been made to the satisfaction of the Contracting Officer. Any areas of seepage, leakage, or failure shall be marked and DERM notified (Mr. Brian Flynn at 305-372-6850) as soon as possible. The location should remain marked until inspected by DERM. The inspection will occur on the next working day after notification, weather permitting. Marine hardgrounds may be present at the selected offshore mooring buoy site for direct pumpout operations. The Contractor shall employ divers to locate and position anchors for a mooring buoy site to prevent damage to hardgrounds from cables, anchors, or dredges. No anchoring shall occur within 150 feet of the hardbottom/reef areas at the monobuoy site. The Contractor shall be required to maintain barricades, warning signals, and flagmen to insure public safety in the vicinity of the pipe discharge. Any damages to private or public property resulting from the Contractor's operations shall be repaired by the Contractor at his expense.

e. Grade stakes and any other stakes for any purpose shall be made of steel pipe that can and will be removed intact after filling to cross sections accepted by or as directed by the Contracting Officer. All stakes shall have sufficient length above grade so they may not be accidentally covered by fill. The Contractor shall consecutively number each piece of pipe used for grade stakes, shall clearly mark that number upon the pipe, and shall record the location of each numbered pipe in a grade stake log. The removal of each numbered pipe shall be recorded in the grade stake log at the time of the pipe/stake removal. At the request of the Contracting Officer, all of the grade stake pipes shall be displayed after their removal to demonstrate those

pipes that have been removed. All pipes used for grade stakes placed within the limits of the beach fill work shall be numbered and shall be recorded in the log. It is the Contractor's responsibility to track, locate, and completely remove all grade stakes in their entirety to the satisfaction of the Contracting Officer.

f. Temporary longitudinal dikes and spreader and/or pocket pipe shall be used to prevent gullying and erosion of the beach and fill and to retain the fill on the beach and within the limits of the fill cross section. As the work progresses, dikes or mounds shall be constructed along the beach to direct the pipeline discharge longitudinally along the beach to avoid transverse gullying directly from the discharge point to the ocean, and to build the new berm to design grade. Longitudinal dikes shall initially be 500 feet long in advance of filling operations. They may need to be lengthened to meet water quality standards. Shorter lengths may be subsequently used if approved by the Contracting Officer. More than one series of longitudinal dikes may be required to meet water quality standards, to build to the required lines and grades, and to keep material within the toe-of-fill. The Contractor will not be held responsible for erosion caused by waves after the beach fill has been satisfactorily placed. No undrained pockets shall be left in any fill during or upon completion of the work. The Contractor shall not permit wastewater to flow landward of the fill section or water to pond between the fill and upland. Groins, bulkheads, revetments, piers, dune walkovers, seawater pipe structures, and other structures within the fill section shall be protected by the Contractor to prevent damage thereof by the Contractor's operations. Any damages assessed as a result of any of the above items shall be at the Contractor's expense.

g. Mechanical operations may be needed to place material to the required lines and grades. Stockpiling, additional longitudinal dikes, and/or other special handling may be needed. It is the Contractor's responsibility to place material to the specified lines and grades within the fill crossed section.

3.4.2.1 Sand Flooding

If the sand is placed in a state that is not completely saturated by hydraulic placement, the Contractor must saturate the dry placed sand to effect consolidation equal to hydraulic placement. No more than 100 cubic yards of sand at a time shall be placed on the beach without saturating. Enough water must be used to completely saturate the sand, not less than 100 gallons of water shall be available for each cubic yard of sand placement. Runoff water shall be controlled so as not to run off the project limits on the upland side and not to run directly to the ocean forming gullies, eroding the fill sand.

3.4.3 Dressing for Payment

Immediately following placement of the new beach fill the Contractor shall grade, level and dress the beach fill to meet the required elevations and dimensions indicated on the drawings. The dressing for payment shall include the removal of humps, depressions, undrained pockets, excavated material at locations of swales for drainage culverts, and vehicle access ramps, etc., prior to final pay survey being taken of an area of Acceptance Section.

3.4.4 Dressing for Final Acceptance

Immediately upon the completion of beach fill placement and removal of equipment and materials from the beach fill area, the final dressing shall be accomplished by the Contractor for final acceptance. This final dressing is a requirement as part of the post-construction cleanup and prior to the sand compaction measurements required by Section 01355 ENVIRONMENTAL PROTECTION of the contract. The bank caused by wave forces shall be graded down to slope not steeper than 1 vertical to 15 horizontal. Grade stakes shall be removed intact and any excavation required to remove the stakes shall be backfilled.

3.4.5 Tolerances

Final grade (F.G.) shall be within tolerances of plus or minus five-tenths (0.5) of a foot of beach fill grade line. (Refer to Beach Fill Tolerance figure appended to the end of this Section.) Tolerance shall extend entire berm and slope to intersection of slope and pre-construction surveyed condition. Contractor may stockpile beach fill above the 0.5 foot tolerance up-slope of the slough zone, to compensate for material expected to be removed by wave action; but smooth slopes shall be maintained. Berm width will vary as directed by the Contracting Officer. Slope shaping shall be accomplished by grading fill into water or as directed by the Contracting Officer.

3.4.6 Misplaced Materials

If any material is deposited other than in places designated or approved, the Contractor may be required to remove such misplaced material and redeposit it where directed at his expense.

3.4.7 Work Area

The construction easements available to the Contractor for accomplishing the work are shown on the drawings. At the fill site, the Contractor may only operate within the work areas shown on the drawings. No anchoring shall occur within 150 feet of the hardbottom areas except within the pipeline corridor. The Contractor shall exclude the public from the work areas in the immediate vicinity of his ~~dredging~~ loading, transporting, stockpiling, and placement operations. The Contractor shall prevent public access to the discharge end of his pipeline. The Contractor shall erect, maintain, and move as necessary, a restrictive barrier around the discharge of the hydraulic pipeline used for beach placement; i.e., similar or equal to orange polypropylene geogrid safety fencing. The barrier shall be constructed so as to prevent the public from approaching the discharge from any direction closer than 40 feet. The Contractor shall post signs in a conspicuous manner stating "DANGER - HIGH PRESSURE DISCHARGE FROM DREDGE". Enforcement shall be the Contractor's responsibility at no additional cost to the Government. The enforcement shall be coordinated with local enforcement agencies, and will be subject to approval of the Contracting Officer. Construction access is provided as shown on the drawings. Procurement of additional access routes for ingress and egress to the construction area shall be obtained by and at the expense of the Contractor. Additionally, the Contractor shall place a safety person at the discharge end of the disposal pipeline. The safety person shall be present at all times during discharge operations and will maintain radio communication between the dredge and the disposal operation.

3.5 NOISE CONTROL

3.5.1 Hauling and Excavating Equipment Other Than Dredges and Booster Pumps

All hauling and excavating equipment, other than dredges and booster pumps, used on this work shall be equipped with satisfactory mufflers or other noise abatement devices. The Contractor shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise.

a. Sound pressure measurements shall be made with a sound level meter and shall be reported to the Contracting Officer under provisions for the Contractor Quality Control.

b. Sound pressure measurements shall be made at distances of 50 feet, 100 feet, 300 feet, and 500 feet from each major piece of equipment such as draglines, dump trucks, dewatering pumps, pneumatic drills, bulldozers, etc., at locations approved by the Contracting Officer. The measurements shall be made by personnel qualified to make such measurements and whose credentials have been verified by the Contracting Officer. The measurements shall be taken during operations every 4 weeks. Temperature, atmospheric pressure, and general weather conditions shall also be recorded with the measurements.

3.5.2 Dredges, Bulk Carriers, and Booster Pumps

Dredges and booster pumps used on this work shall be equipped with satisfactory mufflers or other sound abatement devices to reduce engine noise. The Contractor shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise. The use of horns, the use of whistle signals, and handling of dredge pipelines shall be held to the minimum necessary in order to insure as quiet an operation as possible. Sound pressure measurements shall be made by the Contractor at 50-foot, 100-foot, 200-foot, and 300-foot distances from the (1) dredge, (2) booster pumps, if any, and (3) dredge pipeline at locations approved by the Contracting Officer. The measurements shall be made by personnel qualified to make such measurements and whose credentials have been verified by the Contracting Officer. These measurements shall be taken during pumping operations every 4 weeks. The sound pressure measurements and type of material being dredged at the time measurements are taken shall be reported to the Contracting Officer. Sound pressure measurements shall be made twice at the direction of the Contracting Officer during the first 4 weeks of use of whistle signals and drill barges in operation at 50-foot, 100-foot, 200-foot, and 300-foot distances. Temperature, atmospheric pressure and general weather conditions shall also be recorded with the measurements. The sound pressure measurements shall be reported to the Contracting Officer under provisions for the Contractor Quality Control.

3.6 QUALITY CONTROL

The Contractor shall establish and maintain quality control for operations under this section to assure compliance with contract requirements and maintain records of his quality control for materials, equipment, and construction operations, including but not limited to the following:

3.6.1 Preparatory Inspection

(To be conducted prior to commencing work.)

a. Check location of borrow area, offshore pumpout area, and conditions of beach areas to be filled.

b. Discuss plan of action for dredging, transporting, and placing fill on beach.

c. See that all equipment is approved and is in satisfactory working condition.

d. Check safety requirements and, particularly, public safety.

e. Check the beach site for structures that could be susceptible to damage or which could have further damage caused by the Contractor's activity.

3.6.2 Initial Inspections

(To be conducted after a representative sample of the work is complete.)

a. Check for proper lines, grades, and elevations.

b. See that diking and fill discharge is satisfactory.

c. Check grades and slopes of fill placement.

d. Check finished area for proper dressing and elimination of undrained pockets and abrupt humps.

e. Check any adjacent structures to search for damage by Contractor's equipment.

3.6.3 Follow-up Inspection

(To be conducted daily to assure compliance with results of initial inspection.)

a. Check items mentioned in preparatory and initial inspection.

b. Damage or defects.

A copy of these records, as well as results of corrective action taken, shall be furnished the Government as directed by the Contracting Officer.

3.7 PROTECTION OF EXISTING STRUCTURES FROM CONSTRUCTION ACTIVITIES

3.7.1 Protection Program

The Contractor shall implement a protection program that will protect existing structures from damages that result from construction equipment operations and vibrations. The protection program shall consist of a Pre-Construction Structural Survey, a Vibration Control Plan, a Vibration Control Program, and a Post-Construction Survey.

Existing structures adjacent to the Erosion Control Line are either residential, commercial, or public properties. Structures are comprised of buildings, patios, slabs, swimming pools, pool decks, bulkheads, seawalls, wooden walkways, etc. The purpose of the program is to avoid damages and potential claims that allege damages were caused by construction activities.

3.7.2 Contractor's Responsibility

The Contractor shall assume all responsibility for damages to existing structures within and bordering the project boundaries that may be attributed to project activities. The Contractor shall also be responsible for any work stoppage that results from monitoring, inspection, damages, damage claims and/or damage avoidance activities.

3.7.3 Pre-Construction Structural Survey

The Contractor shall inspect existing structures within 200 feet from the beach fill limit as to their potential susceptibility to vibration damage from construction equipment induced ground vibration. Visible structural and/or cosmetic damage to buildings, exterior walls, foundations, decks, pools, bulkheads, seawalls, etc., shall be documented by photographs, sketches, and field notes. Copies of all documentation shall be provided to the Contracting Officer before commencement of any work on shore involving heavy equipment capable to produce vibrations.

a. Factors to consider in determining potential susceptibility shall include but not be limited to: foundation design; foundation conditions; soils testing data; changes in structural loads and local water levels due to beach fill placement; structural condition including construction materials, past damage history and existing stresses; magnitude, frequency, and duration of predicted vibrations from construction equipment; and, distance from fill placement.

b. The Contractor shall inspect all existing structures that are determined to be vibration sensitive. Any damage found shall be documented thoroughly by photographs (supplemented with video as necessary), sketches of visible structural and/or cosmetic damage, and field notes. Photographs shall be at least 3-1/2" x 5" and shall provide a detailed visual explanation of the damage. Include a reference scale in each close-up photograph. Sketches shall show the general damage location and extent. All inspection items shall be indexed and cross referenced and shall use the stationing and locations shown on the contract drawings. Include hotel/motel names and addresses where applicable. Structural damage shall be additionally documented by measuring crack or damage size, width, and length. Every effort shall be made to inspect and document the condition of the building's interior where the building has been determined to be extremely susceptible to vibration damage. Structures determined not to be susceptible to vibration damage shall be noted as such.

3.7.4 Vibration Control Program

The Contractor shall use the results of the Pre-Construction Survey to develop the Vibration Control Plan. The Vibration Control Program shall use the plan to monitor and adjust daily mobilization, demobilization, and fill placement operations, as necessary. The program shall use the appropriate tolerable vibrations to monitor each structure that has been determined to be susceptible to vibration damage. Should ground vibrations equal or exceed the predetermined maximum vibration level(s), construction operations shall be halted and corrective measures taken in accordance with the approved Vibration Control Plan.

a. The minimum safe working distance that vibration producing equipment may operate from each vibration sensitive structure shall be documented in the Vibration Control Plan.

b. The maximum allowable ground vibration level that is permissible without causing threshold damage to each vibration sensitive structure shall be documented in the Vibration Control Plan. Threshold damage is defined as the occurrence of cosmetic damage.

c. Each seismograph shall have the capability to measure peak particle velocity and frequency and shall be equipped with an alarm system to alert the on site Vibration Control Specialist that ground vibrations are approaching the maximum tolerable ground vibration level.

3.7.5 Vibration Control Specialist

The Contractor's personnel responsible for implementation of the Vibration Control Plan is hereafter called Vibration Control Specialist. The Vibration Control Specialist shall be on the site during mobilization, demobilization, and operation of fill placement equipment. The pre-approved alternate may serve in the event of the Vibration Control Specialist's absence. Periods of absence shall not exceed one week at any one time and not more than 15 workdays during a calendar year. The requirements for the alternate are the same as for the designated Vibration Control Specialist.

3.7.6 Post-Construction Structural Survey

After completion of work, the Contractor shall conduct a post-construction inspection of the structures previously inspected under the pre-construction structural survey. Documentation procedures shall be identical to those performed under the pre-construction inspection. Changes or deviations from the pre-construction inspection conditions in any structure shall be identified and described in the inspection documentation. Copies of all documentation shall be provided to the Contracting Officer not later than 15 calendar days after completion of the work on each segment.

3.7.7 Qualifications for Structural Inspection/Evaluation and Vibration Control Program Personnel

The Contractor shall provide personnel for structural inspections and vibration monitoring which meet at least the following minimum qualifications outlined below. The Contractor shall provide documentation verifying the qualifications to the Contracting Officer for approval within 7 calendar days after the date of Notice of Award. The Contracting Officer reserves the right to reject any individual(s) not meeting the qualifications specified and to request resubmittal of other personnel at no cost to the Government.

3.7.7.1 Structural Inspection/Evaluation Personnel

Structural inspections shall be performed by structural engineers registered in the State of Florida with a minimum of 3 years of demonstrated experience in structural condition inspections.

3.7.7.2 Vibration Monitoring Personnel, including Vibration Control Specialist

Personnel responsible for the Vibration Control Program and Plan shall be registered in the State of Florida with a background in geotechnical and structural engineering and shall have a minimum of 3 years of demonstrated experience in vibration monitoring and related work.

3.7.7.3 Approval of New Personnel

The Contractor shall obtain approval of new personnel that replace personnel that were approved as part of any submitted Vibration Control Plan. Approval requests shall include the same requirements as specified for the original personnel.

3.8 INSPECTION

3.8.1 Quality Assurance Representative (QAR)

The QAR shall be notified prior to the establishment of horizontal control work (baseline layout, ranges, station flags, shore-based control for EPS/RPS, etc.) and vertical control work (tide staff(s), upland cross sections, construction elevations top/invert, maximum/minimum elevations of dredged materials within disposal area(s), etc.), but the presence or absence of the QAR shall not relieve the Contractor of his responsibility for proper execution of the work in accordance with the specifications. The Contractor will be required:

a. To furnish, on the request of the Contracting Officer or any QAR, the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the dredging plant as may be reasonably necessary in inspecting and supervising the work.

b. To furnish, on the request of the Contracting Officer or any QAR, suitable transportation from all points on shore designated by the Contracting Officer to and from the various pieces of plant, and to and from the beach placement.

3.8.2 Failure to Comply

In conjunction with the Clause INSPECTION OF CONSTRUCTION of Section 00700 CONTRACT CLAUSES, should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer and the cost thereof will be deducted from any amounts due or to become due the Contractor.

3.9 DAILY REPORT OF OPERATIONS

See APPENDIX A at the end of this Section (4 pages).

3.10 DECLARATION OF INSPECTION (STATESIDE)

See APPENDIX B at the end of this Section (3 pages).

3.11 SAMPLE - SAJ FORM 2087, GRADATION CURVES

See APPENDIX C at the end of this Section (1 page).

3.12 SAMPLE - CONSTRUCTION AND GRADE STAKES RECOVERY PLAN

See APPENDIX D at the end of this Section (2 pages).

3.13 DIVERS INSPECTION REPORT (OFFSHORE PUMPOUT OPERATION)

See APPENDIX E at the end of this Section (1 page).

3.14 CALCULATION OF MOMENT METHOD FOR MEAN GRAIN SIZE AND PHI STANDARD DEVIATION

See APPENDIX F at the end of this Section (3 pages).

3.15 TABLE 1 - COARSE SAND ADJUSTMENT

See APPENDIX G at the end of this Section (1 page).

3.16 BEACH FILL TOLERANCE (TYPICAL SECTION)

See APPENDIX H at the end of this Section (1 page).

-- End of Section --